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October 7, 2003

Mr. Bill Taylor
Senior Electronic Tech
National Weather Service
405-366-2961

Subject: Portable Davit Crane model # 5121B

Dear Mr. Taylor:

These davit cranes have been load tested to the ultimate failure point of 2250lbs. This failure point provides an ultimate safety factor of 4.5:1 with a 500lb-load rating.

Respectfully,

A handwritten signature in dark ink, appearing to read 'Jeff Wilkowski', with a long horizontal flourish extending to the right.

Jeff Wilkowski
Manager of Engineering

SUPPORT EQUIPMENT
RECOMMENDATION DATA (SERD)

Contractor Unisys Corporation
Contract No. 50-DMNW-8-00032
End Article Ident NEXRAD System
SE Part/Model No. 1213760-201,202
Fig 1 Page No. 16
Revision No. C
Date 18 April 1991

I Functional Analysis

A method must be provided to lift and lower items to and from the radar tower, at the level of the base of the antenna pedestal. Items to be lifted include LRUs in the antenna pedestal, supplies (e.g. oil), and tools and support test equipment. Most LRUs in the antenna pedestal (e.g. motor, gear drive, etc.) are larger and/or heavier than can be carried tower (i.e. heavier than 10 pounds and/or bulkier than 0.5 cubic feet). Fixture (e.g. davit, tripod, boom) and winch should be installed at the tower, inside of the radome. The fixture should be collapsible or lowerable so that it does not interfere with the rotation of the antenna; does not make access to the pedestal more difficult.

PART II Recommended Solution

Develop a radar Tower Lifting Fixture for incorporation as a permanent installed handling equipment in every NEXRAD radar tower. Include common off the shelf hoist or winch capable of lifting approximately 300 lbs. from the ground to the top of the highest NEXRAD radar tower at 30 meters. Thern's crane, MODEL 512B and winch, model 4021B and 4031B are recommended. They come with galvanized steel aircraft cable. See table below for breakout of parts. The manufacturer's specification sheets are attached.

TABLE II
UNISYS PART NUMBER 1213760

| <u>DASH #</u> | <u>DESCRIPTION</u> | <u>VENDOR P/N</u> |
|---|--------------------|---------------------------------|
| CRANE | | 5121B |
| BASE, CRANE SUPPORT | | 511 |
| WINCH, HAND, MARINE GRADE WITH BRAKE | | M4021B FOR 10 & 15 METER |
| 75 FT 1/8 DIA CABLE W/SAFETY HOOK ONE END | PER THIS DWG | TOWER |
| CRANE | | 5121B |
| BASE, CRANE SUPPORT | | 511 |
| WINCH, HAND, MARINE GRADE WITH BRAKE | | M4031B FOR 20, 25 & 30 METER |
| 110 FT 3/16 DIA CABLE W/SAFETY HOOK ONE END | PER THIS DWG | TOWER |

| ITEM NO. | ITEM NAME |
|----------|------------------------|
| 0006 | DAVIT CRANE, RDA TOWER |

SUPPORT EQUIPMENT RECOMMENDATION DATA

SHEET 1 OF 2

| | | | | | | | |
|---|---|------------------------------------|--|---|------------------------|--|--------------------|
| 1. CONTRACTOR Unisys Corporation | | 2. CONTRACT NO. 50-DMNW-8-00032 | | 3. END ARTICLE NOMENCLATURE/MODEL DESIGNATOR Next Generation Weather Radar | | | |
| 4. SE ITEM NAME DAVIT CRANE, RDA TOWER | | | | 5. STATUS CODE | | 6. RESPONSIBLE AGENCY NAT'L WEATHER SERVICE | |
| 7. SYSTEM NO - | 8. DEV/STD STD | 9. COM/PEC COM | 10. USING SERVICE ALL | 11. EI SPEC - | 12. CFE/GFE C | 13. FEDERAL STANDARD - | |
| 14. SEI - | 15. MEA - | 16. PREPOS. PPI | 17. USEABLE ON A | 18. TECH MAN 01 | 19. RRPL/GAPL | 20. MRC - | |
| 21. MATCH INDIC CODE - | | 22. SPARE FACTOR Q000 | 23. CALIB REQ'D | 24. CALIB ITEM - | 25. SM&R CODE PFOZZ | 26. INSTALL SIGNIF. | |
| 27. ARTICLE REQUIRING SUPPORT | | | | | | 8. GSE CRITICAL | |
| 27A. MLMC 0 | 27B. PART NUMBER AND NOMENCLATURE ANTENNA PEDESTAL P/N 1214777 | | | 27C. CMRS - | CONTR SERVICE | | |
| | | | | | 29. REPROCUREMENT DATA | | |
| | | | | | | | |
| 30. REASON FOR DELETION/SUPERSEDURE DATA | | | | | | | |
| 31. REMARKS | | | | | | | |
| 32. DATE OF APPROVAL | | 33. ITEM NO. 0006 | 33A. PART/MODEL NO. 1213760-201,202 | 33B. FSCM 12437 | 33C. DATE 4/18/91 | 33D. REVISION C | 33E. PG. NO. 17 |

SUPPORT EQUIPMENT RECOMMENDATION DATA

SHEET 2 OF 2

| | | | | | | | |
|--|---|------------------------------------|-----------------------|--|--------------------------------|-------------------------|--|
| 1. CONTRACTOR Unisys Corporation | | 2. CONTRACT NO. 50-DMNW-8-00032 | | 3. END ARTICLE NOMENCLATURE/MODEL Next Generation Weather Radar | | | |
| 4. SE ITEM NAME DAVIT CRANE, RDA TOWER | | | | 34. NATIONAL STOCK NUMBER | | 35. GOVT TYPE DESIG. | |
| 36. EST. DATE FIRST ARTICLE 05/31/90 | 37. PROD. LEADTIME 6 | 38. DEVEL. COST \$20,000 | 39. REC QTY FACTOR | 40. RECUR UNIT PRICE \$5,000 | 41. TOT REC QUANTITY 175 | 42. TOT QTY ORDERED | 43. TOTAL PRICE |
| 44. SPECIFIC AUTHORIZATIONS | | | | | | | |
| ACTIVITY | | QUANTITY | ACTIVITY | | QUANTITY | ACTIVITY | |
| OPERATIONAL SUPPORT FACILITY | | 1 | | | | | |
| TRAINING | | 0 | | | | | |
| DEPOT | | 0 | | | | | |
| 45. ALLOWANCE/MLF | | 46. BASIS OF ISSUE | | | 47. SUPERSEDED ITEM (P/N) | | 31. REMARKS |
| | | | | | | | 4 EA 1213760-201,202/W M4021 WINCH 4 EA 1213760-210,202/W M4031 WINCH M4021 WINCH HAS 125' OF 1/8" CABLE M4031 WINCH HAS 110' OF 3/1" CABLE |
| 33. ITEM NO. 0006 | 33A. PART/MODEL NUMBER 1213760-201,202 | | | 33B. FSCM 12437 | 33C. DATE 04/18/91 | 33D. REVISION C | 33E. PG. NO 18 |



Marine WINCHES

P.O. BOX 347 5712 INDUSTRIAL PARK RD. WINONA, MN 55987 507-454-2996

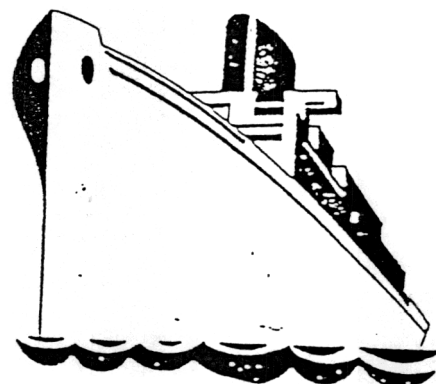
NOT FOR LIFTING PEOPLE,
OR THINGS OVER PEOPLE

MARINE GRADE WINCHES

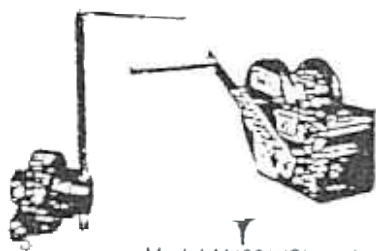
Marine spur gear winches are identical in size and rating to the industrial models, but they have superior corrosion resisting features:

- All marine winches are painted with a primer base coat followed by an enamel finish coat. Excellent resistance to salt spray corrosion.
- Stainless steel fasteners and springs.
- Oil impregnated bronze bushings and sealed ball bearings.
- Therm marine winches have been tested in accordance with the procedures of ASTM Method B117-73 Salt Fog Test.

NOTE: All Therm winches, when used for lifting, lowering or pulling on an incline, must be equipped with a Disc Brake. See Bulletin 40B.

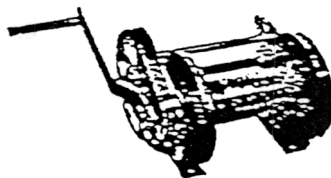


MARINE-GENERAL PURPOSE SPUR GEAR HAND WINCHES



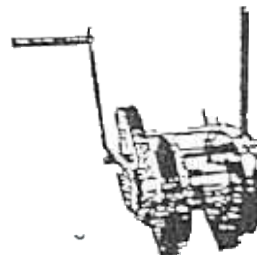
Disc Brake

Model M4021 (Shown)—2" Drum
Model M4031—3" Drum



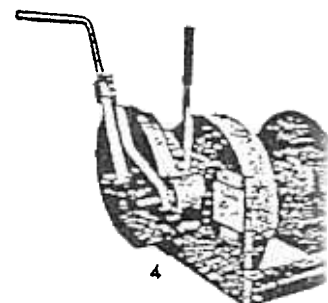
Model M4311—3" Drum

Model M4411 (Shown)—6" Drum



Model M4321 (Shown)—3" Drum

Model M4421—6" Drum



Model M452
Model M492

Complete information on all winches identified as 1, 2, and 3 above is given in Bulletin 40A that of the two models shown at 4 may be seen in Bulletin 40C. For the Disc Brake, refer to Bulletin 40B.

that of the two

NOTE: Final responsibility for determining suitability of equipment to any particular use is that of the owner and/or user; thus all applicable codes, regulations, and manuals of material handling should be studied.

SPECIFICATIONS

Shaded figures are more commonly used

| | LOAD RATING | | | | DRUM CAPACITY | | | | | | | GEAR RATIO SINGLE GEAR | GEAR RATIO DOUBLE GEAR | *PULL REQD TO LIFT 1000 lbs. | DRUM DIMENSIONS | | | OVERALL DIMENSIONS | | | MOUNT- ING | NET WT. | SHIP W | |
|-------|------------------|-----------------|------|------|---------------|------|-----|------|-----|-----|-----|---------------------------|---------------------------|--|--------------------|------|-------|-----------------------|-------|--------|---------------|------------|-----------|------|
| | 2 LAYERS lbs. | FULL DRUM kg | lbs. | kg | 1/8 | 3/16 | 1/4 | 5/16 | 3/8 | 1/2 | 3/4 | | | | ID | OD | W | LENGTH | WIDTH | HEIGHT | | | | BOLT |
| M4021 | 1000 | 450 | 300 | 135 | 125 | 55 | | | | | | | | | 1.50 | 4.56 | 2.00 | 5.00 | 7.25 | 5.75 | 3/8 | 10 | | |
| M4031 | 1000 | 450 | 300 | 135 | 250 | 110 | | | | | | 2.85 | | 55 | 1.50 | 4.56 | 4.00 | 8.25 | 8.25 | 5.75 | 3/8 | 12 | | |
| M4311 | 2000 | 900 | 850 | 385 | 235 | 105 | 70 | 45 | | | | 3.83 | 14.7 | 22 | 2.50 | 5.44 | 3.00 | 8.50 | 9.75 | 7.25 | 3/8 | 21 | | |
| M4321 | 2000 | 900 | 850 | 385 | 235 | 105 | 70 | 45 | | | | 3.83 | 14.7 | 22 | 2.50 | 5.44 | 3.00 | 8.50 | 9.75 | 7.25 | 3/8 | 21 | | |
| M4411 | 2000 | 900 | 850 | 385 | 470 | 210 | 140 | 90 | | | | 3.83 | 14.7 | 22 | 2.50 | 5.44 | 6.00 | 11.50 | 9.75 | 7.25 | 3/8 | 25 | | |
| M4421 | 2000 | 900 | 850 | 385 | 470 | 210 | 140 | 90 | | | | 3.83 | 14.7 | 22 | 2.50 | 5.44 | 6.00 | 11.50 | 9.75 | 7.25 | 3/8 | 25 | | |
| M452 | 4000 | 1800 | 2000 | 900 | 1220 | 550 | 290 | 200 | 140 | 80 | 50 | 35 | 4.42 | 19.54 | 4.5 | 4.00 | 8.50 | 6.38 | 16.00 | 15.00 | 10.75 | 1/2 | 80 | 8 |
| M492 | 10000 | 4500 | 4000 | 1800 | 3300 | 1500 | 800 | 540 | 380 | 220 | 145 | 100 | 5.00 | 25.00 | 5.4 | 5.00 | 12.38 | 7.62 | 19.00 | 20.40 | 14.00 | 3/4 | 156 | 15 |

*Handle pull (lbs) required to lift 1000 lbs on an empty drum using maximum handle length.

Add the suffix "B" to any model to specify the addition of the Disc Brake (example: M4021B).



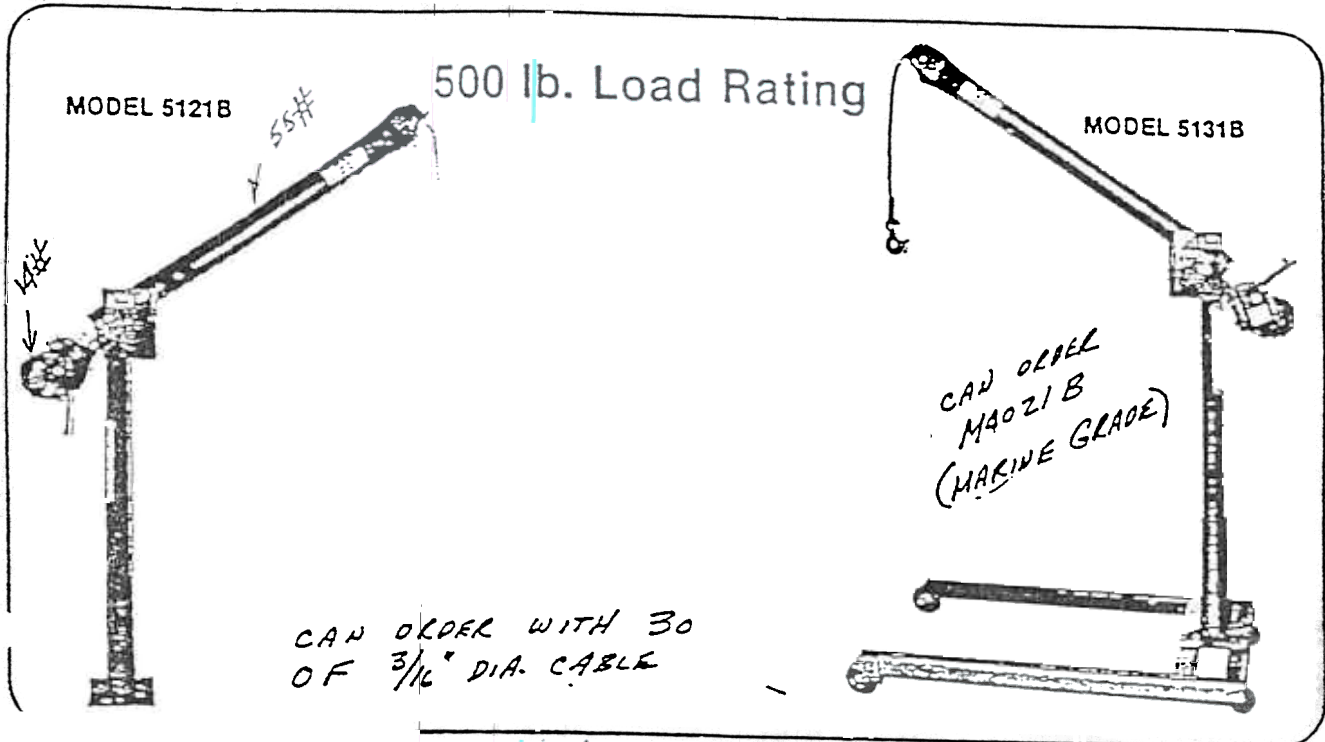
ECONO CRANE FRE ROL PORTACRANE DAVIT CRANES

MAX CABLE LENGTH 57'

NOT FOR LIFTING PEOPLE,
OR THINGS OVER PEOPLE

ECONO CRANE

DAVIT MODEL 5121B SHOP MODEL 5131B



SPECIFICATIONS AND DIMENSIONS

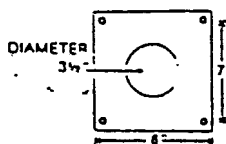
| MODEL | 5121B | 5131B |
|--|-------------|-------------|
| Load rating, lbs. | 500 | 500 |
| Load rating, kg. | 225 | 225 |
| Winch model | 4021B | 4021B |
| Lift ("Empty), ins. | 62 | 67 |
| *Boom heights or lifts will vary somewhat with loading | | |
| Height of mast, ins. | 46 | 50 |
| Height overall, ins. | 70 | 75 |
| Length when folded, ins. | 61 1/4 | 61 1/4 |
| Reach, mast to cable, ins. | 34 | 34 |
| Cable—size and length | 3/16" - 16' | 3/16" - 16' |
| Boom rotation, degrees | 360 | — |
| Distance between legs, ins. | — | 25 |
| Anchor bolt size (Use ASTM Gr. 5) | 3/8" | — |
| Model number of base | 511 | 514 |
| Weight, approximate, lbs. | 85 | 142 |

- By repositioning a pin the Econo Crane can be folded conveniently for handling and storage or to eliminate swinging and rotating of the boom when truck is in travel.
- Use of Davit Crane Model 5121B at various locations is accommodated by installation of additional bases (model 511).
- The two Econo Crane models convert easily from one to the other simply by removing from one base and replacing to the other base. (Example: from Davit base 511 to Wheel base 514.)

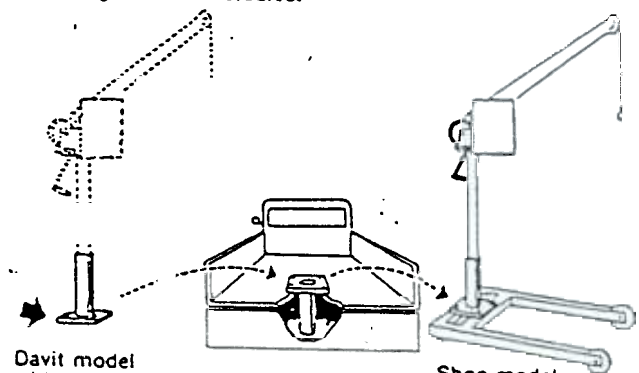
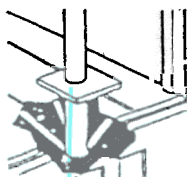
NOTE: Final responsibility for determining suitability of equipment to any particular use is that of the owner and/or user; thus all applicable codes, regulations, and manuals of material handling should be studied.



Base model 511



Base can be mounted with plate up or plate down



Davit model with base 511

Shop model with base 514

SEED # 6

FSCM 56232 DWG NO. 1213760

SHEET 1 OF 5

APPLICATION

1214776 NHA USED ON LTR DATE CO ECP O/A REVISION DESCRIPTION APVD
NEXRAD A 90-04-16 A03493(U) REVISED & REDRAWN P.S. 90-06-

SPECIFICATION CONTROL DRAWING

CONTR NO. 50-DMNW-8-00032

UNISYS CORPORATION
SHIPBOARD AND GROUND SYSTEMS GROUP
GREAT NECK, NY 11020

NOMENCLATURE

HOIST, WIRE, ROPE, CRANE

RELEASE DATE

APVD DATE
DWN JB 7/29/89 CHK VHB
QA MVD 7/20/89 ENGRG GB 89-6-7
STD EVC 7/18/89 MFG DP 7-25-89
R/M

SIZE FSCM NO. DWG NO. REV
A 56232 1213760 A

SCALE NONE SHEET 1 OF 5

1. GENERAL
- 1.1 INTERPRET DRAWING IN ACCORDANCE WITH DOD-STD-100
- 1.2 IDENTIFICATION OF THE SUGGESTED SOURCE(S) OF SUPPLY HEREON IS NOT TO BE CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOURCE OF SUPPLY FOR THE ITEM DESCRIBED ON THIS DRAWING.
2. REQUIREMENTS
- 2.1 CONSTRUCTION: THIS IS A DAVIT CRANE WITH A MANUALLY ACTUATED SPUR GEAR WINCH, BRAKING DEVICE AND AIRCRAFT-TYPE CABLE WITH SAFETY HOOK.
- 2.2 LIFT: 62 INCHES
- 2.3 HEIGHT OVERALL: 70 INCHES
- 2.4 HEIGHT OF MAST: 64 INCHES
- 2.5 REACH (MAST TO CABLE): 34 INCHES
- 2.6 GEAR RATIO:
- 2.7 BOOM ROTATION: 360 DEGREES
- 2.8 CAPACITY: PER TABLE I
- 2.9 PULL REQUIRED TO LIFT RATED LOAD: PER TABLE I
- 2.10 CRANE AND BASE
- 2.10.1 MATERIAL: STEEL (TYPE OPTIONAL)
- 2.10.2 FINISH: PAINTED (COMMERCIAL)
- 2.10.3 COLOR: ORANGE
- 2.11 WINCH
- 2.11.1 GRADE: MARINE
- 2.11.2 OPERATION: LEFT-HANDED
- 2.11.3 FINISH: ZINC DICHROMATE

| | | | |
|------|----------|---------|-----|
| SIZE | FSCM NO. | DWG NO. | REV |
| A | 56232 | 1213760 | A |

| | |
|------------|--------------|
| SCALE NONE | SHEET 2 OF 5 |
|------------|--------------|

2.12 CABLE

2.12.1 MATERIAL: 7x19 STEEL AIRCRAFT-TYPE (COMMERCIAL)

2.12.2 FINISH: GALVANIZED (COMMERCIAL)

2.13 IDENTIFICATION: VENDOR TO APPLY IDENTIFICATION AND VENDOR PART NUMBER IN ACCORDANCE WITH MIL-STD-130.

| TABLE I | | |
|----------|----------------|---|
| DASH NO. | CAPACITY (LBS) | PULL REQUIRED TO LIFT RATED LOAD (LBS) |
| 201 | 400 | 22 |
| 202 | 500 | 28 |

SIZE
AFSCM NO.
56232DWG NO.
1213760REV
A

SCALE NONE

SHEET 3 OF 5

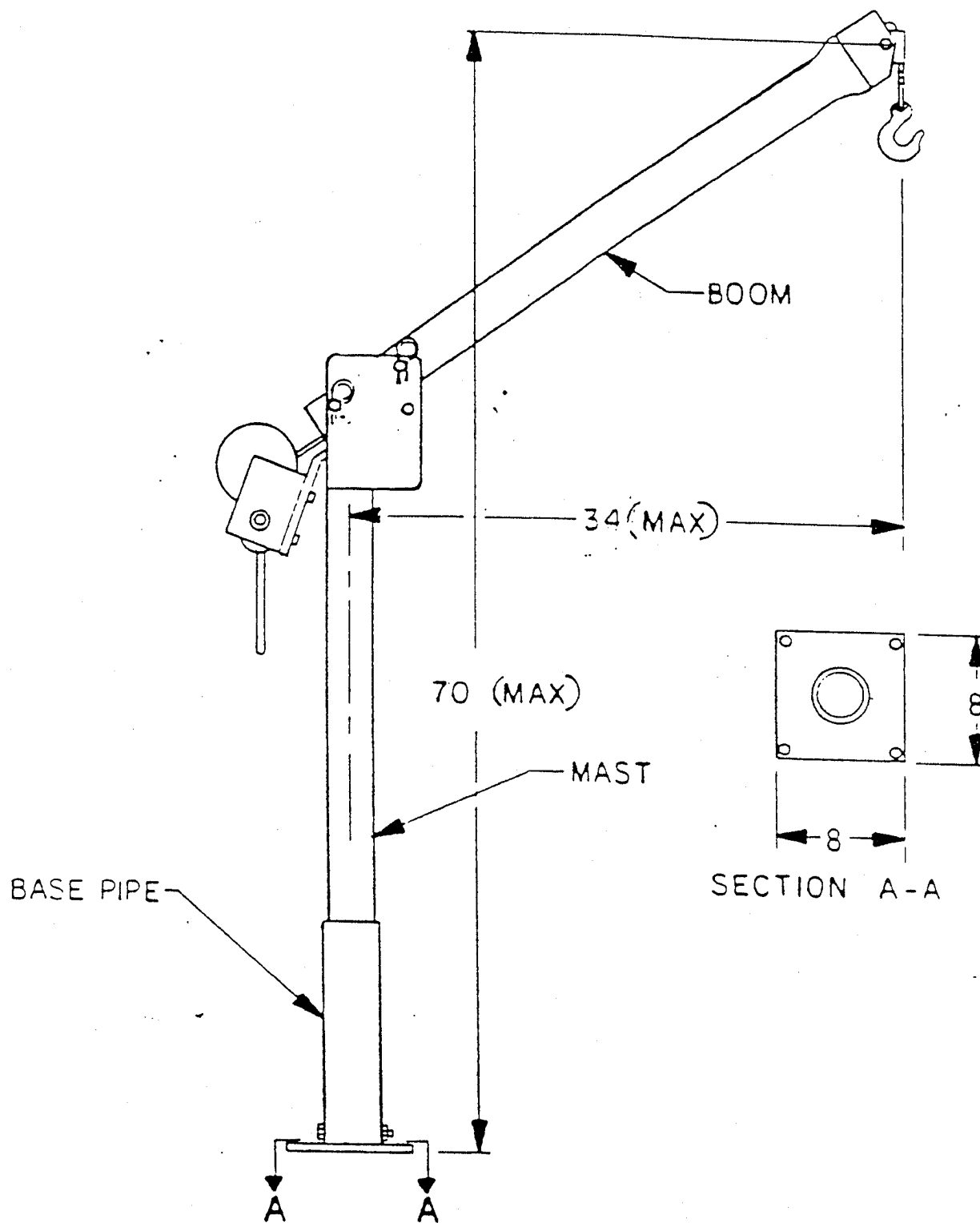


FIGURE I

SIZE
A

FSCM NO.
56232

DWG NO.
1213760

REV
A

SCALE NONE

SUGGESTED SOURCE(S) OF SUPPLY:

TERN, INC.
WINONA, MINNESOTA

FSCM 12437

PART NO.: SEE TABLE II

TABLE II

| DASH NO. | DESCRIPTION | VENDOR PART NO. |
|----------|---|------------------|
| 201 | CRANE | 5121B |
| | BASE, CRANE SUPPORT | 511 |
| | WINCH, HAND, MARINE GRADE WITH BRAKE | M4021B |
| | 75 FEET 1/8 DIA CABLE WITH SAFETY HOOK ONE END | PER THIS DWG. |
| 202 | CRANE | 5121B |
| | BASE, CRANE SUPPORT | 511 |
| | WINCH, HAND, MARINE GRADE, WITH BRAKE | M4031B |
| | 110 FEET 3/16 DIA CABLE WITH SAFETY HOOK ONE END | PER THIS DWG. |

SIZE
A

FSCM NO.
56232

DWG NO.
1213760

REV
A

SCALE NONE

SHEET 5 OF 5